

See "Instructions for Filling out the Work Permit" contained in the Work Planning and Control for Experiments and Operations Subject Area.

1. Work request WCC fills out this section.
☐ Standing Work Permit

Requester: Carter Biggs	Date:	Ext.: 7515	Dept/Div/Group: PO/PHENIX
Other Contact person (if different from requester): John Tradeski			Ext.: 5383
Work Control Coordinator: Carter Biggs	Start Date: 12/1/2014		Est. End Date: 2/1/2014
Brief Description of Work: Tasks required at end of shutdown to prepare PHENIX for run 15			
Building: 10008	IR	Equipment: PHENIX (all)	Service Provider: PHENIX Techs, BNL Trades

2. WCC, Requester/Designee, Service Provider, and ESSH (as necessary) fill out this section or attach analysis

ESSH ANALYSIS			
Radiation Concerns	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Activation	<input type="checkbox"/> Airborne Contamination
		<input type="checkbox"/> Radiation	<input type="checkbox"/> NORM
			<input type="checkbox"/> Other
<input type="checkbox"/> Special nuclear materials involved, notify Isotope Special Materials Group		<input type="checkbox"/> Fissionable/Radiological materials involved, notify Laboratory Nuclear Safety Officer	
Radiation Generating Devices:	<input type="checkbox"/> Radiography	<input type="checkbox"/> Moisture Density Gauges	<input type="checkbox"/> Soil Density Gauges
			<input type="checkbox"/> X-ray Equipment
Safety and Security Concerns	<input type="checkbox"/> None	<input type="checkbox"/> Explosives	<input type="checkbox"/> Transport of Haz/Rad Material
<input type="checkbox"/> Adding/Removing Walls or Roofs	<input type="checkbox"/> Critical Lift	<input type="checkbox"/> Fumes/Mist/Dust*	<input type="checkbox"/> Magnetic Fields*
<input type="checkbox"/> Asbestos*	<input type="checkbox"/> Cryogenic	<input type="checkbox"/> Heat/Cold Stress	<input type="checkbox"/> Nanomaterials/particles*
<input type="checkbox"/> Beryllium*	<input checked="" type="checkbox"/> Electrical	<input type="checkbox"/> Hydraulic	<input type="checkbox"/> Noise*
<input type="checkbox"/> Biohazard*	<input checked="" type="checkbox"/> Elevated Work	<input type="checkbox"/> Lasers*	<input type="checkbox"/> Non-ionizing Radiation*
<input type="checkbox"/> Chemicals/Corrosives*	<input type="checkbox"/> Excavation	<input type="checkbox"/> Lead*	<input type="checkbox"/> Oxygen Deficiency*
<input type="checkbox"/> Confined Space*	<input type="checkbox"/> Ergonomics*	<input checked="" type="checkbox"/> Material Handling	<input type="checkbox"/> Penetrating Fire Walls
			<input type="checkbox"/> Vacuum
Ladder Access Required: <input type="checkbox"/> Portable Ladder <input type="checkbox"/> Fixed Ladder- Status/Restrictions:			
* Safety Health Rep. Review Required		<input type="checkbox"/> Haz, Rad, Bio Material Exceed DOE 151.1-C Levels - Contact OEM	
		<input type="checkbox"/> Other	
Environmental Concerns		<input checked="" type="checkbox"/> None	
<input type="checkbox"/> Atmospheric Discharges (rad/non-rad/GHG)		<input type="checkbox"/> Land Use Institutional Controls	
<input type="checkbox"/> Chemical or Rad Material Storage or Use		<input type="checkbox"/> Liquid Discharges	
<input type="checkbox"/> Cesspools (UIC)		<input type="checkbox"/> PCB Management	
<input type="checkbox"/> High water/power consumption		<input type="checkbox"/> Spill potential	
		<input type="checkbox"/> Soil Activation/contamination	
		<input type="checkbox"/> Waste-Clean	
		<input type="checkbox"/> Waste-Hazardous	
		<input type="checkbox"/> Waste-Industrial	
		<input type="checkbox"/> Waste-Mixed	
		<input type="checkbox"/> Waste-Radioactive	
		<input type="checkbox"/> Waste-Regulated Medical	
		<input type="checkbox"/> Historical Environmental Hazards	
Waste disposition by: <input type="checkbox"/> Other			
Pollution Prevention (P2)/Waste Minimization Opportunity: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes			
Environmental Preferable Products Available: <input type="checkbox"/> No <input type="checkbox"/> Yes			
FACILITY CONCERNS			
<input checked="" type="checkbox"/> None			
<input type="checkbox"/> Intermittent Energy Release			
<input type="checkbox"/> Access/Egress Limitations	<input type="checkbox"/> Electrical Noise	<input type="checkbox"/> Potential to Cause a False Alarm	
<input type="checkbox"/> Credited Controls (Use USI Process)	<input type="checkbox"/> Impacts Facility Use Agreement	<input type="checkbox"/> Temperature Change	
<input type="checkbox"/> Configuration Management	<input type="checkbox"/> Maintenance Work on Ventilation Systems	<input type="checkbox"/> Utility Interruptions	
<input type="checkbox"/> Vibrations			
<input type="checkbox"/> Other			
WORK CONTROLS			
Work Practices			
<input type="checkbox"/> None	<input type="checkbox"/> Exhaust Ventilation	<input checked="" type="checkbox"/> Lockout/Tagout	<input type="checkbox"/> Spill Containment
<input checked="" type="checkbox"/> Back-up Person/Watch	<input type="checkbox"/> HP Coverage	<input type="checkbox"/> Posting/Warning Signs	<input type="checkbox"/> Time Limitation
<input type="checkbox"/> Barricades	<input type="checkbox"/> IH Survey	<input type="checkbox"/> Scaffolding-requires inspection	<input type="checkbox"/> Warning Alarm (i.e. "high level")
			<input type="checkbox"/> Security (see Instruction Sheet)
			<input type="checkbox"/> Other
<input type="checkbox"/> Electrical Inspection Required			
Personal Protective Equipment			
<input type="checkbox"/> None	<input type="checkbox"/> Ear Plugs	<input checked="" type="checkbox"/> Gloves, as necessary	<input type="checkbox"/> Lab Coat
<input type="checkbox"/> Coveralls	<input type="checkbox"/> Ear Muffs	<input type="checkbox"/> Goggles	<input type="checkbox"/> Respirator*
<input type="checkbox"/> Disposable Clothing	<input type="checkbox"/> Face Shield	<input type="checkbox"/> Hard Hat	<input type="checkbox"/> Safety Harness
		<input type="checkbox"/> Shoe Covers	<input checked="" type="checkbox"/> Safety Shoes, as req'd
			<input type="checkbox"/> High visibility cloths/vest
			<input type="checkbox"/> Other
Permits Required (Permits must be valid when job is scheduled.)			
<input checked="" type="checkbox"/> None			
<input type="checkbox"/> Concrete/Masonry Penetration	<input type="checkbox"/> Cutting/Welding	<input type="checkbox"/> Impair Fire Protection Systems	
<input type="checkbox"/> Confined Space Entry	<input type="checkbox"/> Digging/Core Drilling	<input type="checkbox"/> Rad Work Permit-RWP No	
	<input type="checkbox"/> Electrical Working Hot	<input type="checkbox"/> Other Confined Space 2A certification	
Dosimetry/Monitoring			
<input checked="" type="checkbox"/> None			
<input type="checkbox"/> Air Effluent	<input type="checkbox"/> Heat Stress Monitor	<input type="checkbox"/> Real Time Monitor	<input type="checkbox"/> TLD
<input type="checkbox"/> Ground Water	<input type="checkbox"/> Noise Survey/Dosimeter	<input type="checkbox"/> Self-reading Pencil Dosimeter	<input type="checkbox"/> Waste Characterization
<input type="checkbox"/> Liquid Effluent	<input type="checkbox"/> O ₂ /Combustible Gas	<input type="checkbox"/> Self-reading Digital Dosimeter	<input type="checkbox"/> Other
	<input type="checkbox"/> Passive Vapor Monitor	<input type="checkbox"/> Sorbent Tube/Filter Pump	
Training Requirements (List specific training requirements)			
CA -Collider User, PHENIX Awareness			
Work screening has identified the following as the reason for permitted work:		When work is categorized as worker planned work and a permit is used only the following signatures are required: (Although allowed, there is no need to use back of form)	
<input type="checkbox"/> ESSH		WCC: _____ Date: _____	
<input type="checkbox"/> Complexity		Service Provider: _____ Date: _____	
<input type="checkbox"/> Work Coordination		Authorization to start: _____ Date: _____	
<input checked="" type="checkbox"/> Permit Not Required (Sections 3 through 7 optional)		(Department/Division, or their equivalent, Sup/WCC/Designee)	

3. Both work requester and service provider contribute to work plan (use attachments for detailed plans)

Work Plan (procedures, timing, equipment, scheduling, coordination, notifications, and personnel availability need to be addressed in adequate detail): See attached work plan and procedure

Special Working Conditions Required (e.g., Industrial Hygiene hold points or other monitoring)
None

Notifications to operations and Operational Limits Requirements: None

Post Work Testing, Notification or Documentation Required: See Attached Plan

Job Safety Analysis Required: ☐ Yes ☒ No

Review Done: ☒ in series ☐ team

Reviewed by: * Primary Reviewer signature (not required for Worker Planned Work) means that the Review Team members were appropriate for the work that was planned, the Team visited the job site, hazards and risks that could impact ESSH have been considered and controls established according to BNL requirements. In addition, this signature indicates that applicable JRAs, FRAs, as well as other planning documents have been reviewed and training requirements have been identified and recorded on this permit.

Title	Name (print)	Signature	Life #	Date
ES&H Professional				
F&O Facility Project Manager				
Service Provider				
Work Control Coordinator	Carter Biggs		15639	
Safety Health Representative				
Research Space Manager				
Other				
Other				
Required Walkdown Completed				
*Primary Reviewer				

4. Job site personnel (Supervisor and workers) fill out this section.

Note: Signature indicates personnel performing work have read and understand the hazards and permit requirements (including any attachments) and all training required for this permit is current/complete. Job Supervisor/Contractor Supervisor signatures also includes verification that worker training required for this permit is current/complete.

Job Supervisor:		Contractor Supervisor:	
Workers:	Life#:	Workers :	Life#:

Workers are encouraged to provide feedback on ESSH concerns or on ideas for improved job work flow. Use feedback form or space below.

5. Department/Division, or their equivalent, Line Manager or Designee

Conditions are appropriate to start work: (Permit has been reviewed, work controls are in place and site is ready for job.)

Name:	Signature:	Life#:	Date:
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6. Worker provides feedback.

Worker Feedback (use attached sheets as necessary)

a) WCM/WCC: Are there any changes as a result of worker feedback? ☐ Yes ☐ No

Note: See Work Planning and Control for Experiments and Operations Subject Area section 2.6.

7. Post Job Review/Closeout: Work Control Coordinator (authorizing dept.) checks quality of completed permit and ensures the work site is left in an acceptable condition. (WCC can delegate clean up of job site to work supervisor.) The WCC ensures that the change process to update drawings, placards, postings, procedures, etc., is initiated, if necessary.

Name:	Signature:	Life#:	Date:
Comments:			

PHENIX Preparations for Start of Run Checklist, December 2014 until ready for Run 15

Introduction

The standard preparation-for-start-of-run tasks are to be performed in precisely the order indicated in the sequence of operations section below. These tasks are to be performed in accordance with relevant PHENIX Procedures (where indicated) or otherwise best practices in accordance with BNL standards and training for “worker planned work”, as appropriate. These tasks are to be accomplished in accordance with the latest startup preparation schedule as indicated in the current PHENIX technical support weekly planning meeting (see PHENIX Internal web site, systems engineering page for latest information). **PHENIX technicians shall make certain that all of their required training is up to date, all equipment requiring certifications and/or calibration is up to date, and that all other equipment and tools are operating within normal operating parameters and in accordance with all BNL, CAD and PHENIX safety requirements.**

BNL technicians and engineers shall also make certain that all non-BNL personnel working at PHENIX during the 2014 preparation for run 15 are appropriately trained for the tasks they will be performing, that all tasks have been properly reviewed and planned, and that all required permits are in place prior to commencement of such tasks.

(**Note:** There may be other work associated with operation, testing, maintenance, repair and upgrade of PHENIX detector systems and infrastructure being undertaken during the several weeks prior to COMMENCEMENT OF RUN 15. Such work may continue subject to the direction of PHENIX engineering and work coordinators. **In the event that such work conflicts and/or might lead to a potentially unsafe condition, either the work being performed under this work permit or the conflicting work will be temporarily interrupted as determined to be most appropriate by PHENIX engineering and work coordinators.** Such other work shall be planned and coordinated, as appropriate, in separate work planning documentation.)

Abbreviations

AH – Assembly Hall
CAD – Collider-Accelerator Division
CM – Central Magnet
EC - East Carriage
IR – Interaction Region
MMN – North Muon Magnet
MMS - South Muon Magnet
MuID – Muon Identifier detector subsystem

TOF – Time of Flight detector subsystem
WC – West Carriage

Sequence of Operations

1. Prepare IR for East Carriage Roll-in
 - a. Move the CM to its home (run) position (PHENIX Techs, PP-2.5.5.1-01, PP-2.5.5.2-01)
 - b. Connect CM magnet water cooling and magnet leads (CAD Techs)
 - c. Move MuID collars into docking position adjacent to northeast end of south MuID panels (PHENIX Techs)
 - d. Remove manlifts from IR (PHENIX Techs)
 - e. Remove aluminum plates from IR (PHENIX Techs)
 - f. Remove 12 ton cart from IR to AH (PHENIX Techs)
 - g. Remove cart tracks from IR to AH
2. (These tasks are independent of task 1 and subtasks and may be performed simultaneously.) Prepare EC to move into AH.
 - a. Disconnect shutdown temporary water, elect and fiber connections from EC (PHENIX Techs, PP-2.5.5.2-04)
 - b. Fold and stow EC yellow platforms and handrails in preparation for move to IR (BNL Carpenters and Riggers under CAD engineering supervision)
 - c. Make sure all potentially interfering items and debris are removed from EC path. (PHENIX Techs)
3. Move the EC to the IR. (PP-2.5.5.1-01, PP-2.5.5.2-01)
4. Re-connect gas sniffers, water, elect., gas, fibers.
5. Install the MuID Collars (PP-2.5.5.4-25)
6. Un-Fold the EC platforms, re-install safety rails and reinstall the EC material lift and ladder (BNL Carpenters and Riggers under CAD engineering supervision).

7. Restore all PHENIX electronics currently in summer shutdown safe modes to operating modes.
8. Re-connect EC lift wiring and TOF blower wiring (PHENIX electrician).
9. Assemble large rolling shield wall and base (BNL Riggers under CAD engineering supervision).
10. Close large rolling shield wall (PHENIX Techs, PP-2.5.5.2-02)
11. Request re-installation of radiation interlocks by CAD liaison engineer.
12. Perform magnet tests. (CAD Techs under CAD engineering supervision) (This step may be performed at any time after magnet leads and water cooling have been re-installed.)
13. Perform electrical, magnet and safety system checkout in accordance with CAD and PHENIX blue, pink and white checklist sheets. (PHENIX and CAD Engineers and Technicians in accordance with procedures referenced on checklist sheets.)
14. Start Watch shifts (PHENIX Run Coordinator)
15. Start Flammable Gas flow (PHENIX Technicians in accordance with Gas system operation procedures for each applicable detector subsystem.)
16. Detector subsystem commissioning (PHENIX Collaboration scientists in accordance with appropriate subsystem operating procedures.)
17. Ready for Run 15

Specific tasks for the preparation of the PHENIX Detector Complex for Run 14 not covered herein shall be individually evaluated for training requirements, permit requirements and planned in accordance with BNL standard practices.